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10/594,733	04/05/2007	Hiroshi Shibaoka	06172	5777

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EXAMINER	
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ART UNIT	PAPER NUMBER
1782	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,733	SHIBAOKA ET AL.	
	Examiner	Art Unit	
	JENNIFER STEELE	1782	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6,7,10 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6,7,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claim 1-3, 6, 7, 10 and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Akamatsu et al (US 5,273,813) in view of Fukunishi (2006/0183390).

Claim 1 describes A bag made of a downproof fabric comprising a polyester fabric having

- a total cover factor of not lower than 1600 and
- a mass per unit area of not higher than 45 gsm
- the fabric being heat treated by calendaring,
- wherein said polyester fabric is composed of

- polyester multifilament A yarns having a total fineness of not higher than 25 dtex and a single yarn fineness of not higher than 2.0 dtex and
- multifilament B yarns having a total fineness of not lower than 35 dtex

- wherein the arrangements of the respective yarns in the warp and weft directions are such that the yarn constitution ratio "B yarn/A yarn" is ¼ to 1/20 (number of yarns to number of yarns ratio) and
- wherein the A yarn to B yarn pitches are not longer than 7 mm.

Akamatsu is directed to a fabric material that has high resistance to tearing and is useful for sporting goods utilizing wind pressure, for example, yacht sails, paragliders and hanggliders. Akamatsu teaches a woven fabric of polyester fibers wherein the basis weight is 20-100 gsm (ABST) and therefore teaches embodiments in the claimed range of not higher than 45 gsm.

Akamatsu teaches the polyester fibers have an individual fineness of 1.5 to 3.0 deniers, which is equivalent to 1.65 to 3.3 dtex. A dtex of 1.65 is within the claimed range of less than 2.0 dtex. Akamatsu teaches a multifilament polyester yarn is made from the fine fibers. Akamatsu teaches the multifilament polyester yarn can be 20 denier (col. 12, lines 40), which is equivalent to 22 dtex and in the claimed range of less than 25 dtex.

Akamatsu teaches the polyester fabric is woven in a structure (col. 11 and 12) of warp and weft yarns densities of 150 yarns/ 25.4 mm with a 20 denier multifilament

yarn. The weaving structure has 20 polyester multifilament yarns having a denier of 20 (referred to as thin yarns) / a thick yarn which is composed of doubled three 20, 40 or 75 denier yarns / 2 thin yarns / 1 thick yarn. The thin yarn is equated with the claimed multifilament A yarn of less than 25 dtex. The thick yarn has a fineness of three 20 denier yarns that are doubled which is a total denier of 120 denier or 132 dtex. The thick yarn is equated with the claimed multifilament B yarn of fineness not lower than 35 dtex.

Akamatsu's weaving pattern has 2 thick yarns for every 22 thin yarns which within the claimed ratio of 1-B yarn to 4-A yarns and 1-B yarn to 20-A yarns.

Akamatsu teaches there are 150-20 denier yarns per 25.4 mm. For the pattern of 20 thin yarns to 1 thick yarn, 20 thin yarns would occupy a width of 3.4 mm (20/150 * 25.4 mm). Therefore there would be a B yarn or thick yarn, every 3.4 mm and this structure is in the claimed range where the A yarn to B yarn pitches are less than 7 mm.

Akamatsu differs and does not teach a downproof bag, however this claim limitation is directed to a statement of use and does distinguish the claimed material from prior art. Further the limitation of a downproof bag is recited in the preamble and does not further limit the structure of the article claimed. However, Fukunishi provides evidence that it is known in the art to employ a woven polyester for a downproof article.

Akamatsu differs and does not teach the fabric is calendered. Akamatsu teaches the filaments are fed through a feed roller and a nip roller (col. 6, lines 58-61) which is a process that is equated with calendering. Akamatsu teaches the filaments are calendered which would produce a stronger, flatter fiber which would provide a higher

cover factor that a round fiber. Process limitations in claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. However, Fukunishi provides evidence that it is known in the art to employ a calendaring step motivated to produce a downproof fabric.

Akamatsu differs and does not teach the property of cover factor not lower than 1600. Using the cover factor formula disclosed in Applicant's specification and the embodiment shown in col. 11 and 12 of Akamatsu, the calculated cover factor is about 1528 for 20 - 20 denier yarns + 1-60 denier yarn + 2-20 denier yarns + 1-60 denier yarns. 1528 is not greater than 1600 as claimed. Akamatsu teaches the 3-20 denier yarns that are combined to make the thick yarn are also doubled. This would result in a 120 denier yarn. The cover factor for 20 - 20 denier yarns + 1-120 denier yarn + 2-20 denier yarns + 1-120 denier yarns is 1680 and in the claimed range. As Akamatsu differs and does not teach the property of cover factor and it is unclear whether Akamatsu's polyester fabric is in the claimed range, Fukunishi is relied upon for teaching the claimed cover factor.

Fukunishi teaches a woven fabric and method for producing the same (Title). Fukunishi teaches a woven fabric that is thin, light, has low air permeability and high tear strength and is suitable for use as ticking covers of down jackets.

Fukunishi teaches cover factors of 1600 to 2000 (claim 4).

Fukunishi teaches unit weight of the fabric is preferred to be below 45 gsm and 40 gsm [0010].

Fukunishi teaches polyester multifilament are known to be used in these fabrics in the background section of the publication providing the suggestion that it would have been obvious to substitute polyester for the nylon [0004].

Fukunishi teaches yarn filaments of single yarn fineness of 1.2 dtex and below and multifilament is 30 dtex of less. Applicant claims yarn A of total fineness not higher than 25 dtex which is substantially the same as 30 dtex and it would have been obvious to select total fineness of 25 dtex based on the disclosure of Fukunishi.

As to the B yarn claimed, Fukunishi teaches a rip stop weave wherein a secondary yarn is employed to satisfy lightness and tear strength. Fukunishi teaches the rip stop yarn is of larger fineness. Fukunishi is silent with respect to the size of the rip stop yarn. A larger fineness would be larger than 30 dtex and would encompass the claimed range of 35 dtex. Fukunishi presents a finding that one of ordinary skill in the art could have employed a B-yarn of greater than 35 dtex and the results of the combination would have been predictible.

Fukunishi teaches the ratio of primary yarns (equated with A yarns) to rip stop yarns (equated with B yarns) in examples 1 wherein the A yarns have a density of 198 warp density/2.54 cm and the rip stop, B yarns, have a density of 1 every 0.64 mm [Table 1]. [0037]. Calculating the ratio of A to B yarns results in a ratio of 20% or 1/5 which is in the range of 1/4 to 1/20. 198/25.4 mm = (7.8) A-yarns/mm; every 0.64 mm there is a B-yarn which yields (5) A-yarns for every B-yarn.

Fukunishi teaches that the rip stop width is 0.64 to 0.69 in example 1 [Table 1]. This is in the claimed range of not longer than 7 mm. Fukunishi teaches it is desirable

to have the lattice design of the rip stop yarn be less than 5 mm and less than 1.5 mm [0025].

Fukunishi teaches the fabric is calendered [0026] and has a tear strength of 10-50 N [claim 1] and an air permeability of below 1.5 cm^3/cm^2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the features of Fukunishi's downproof fabric such as cover factor and calendaring with Akamatsu's sporting fabric motivated to produce polyester down proof fabric.

As to claim 2, Applicant describes parallel yarns as double, triple or quadruple yarns [0028] and Akamatsu teaches the B yarns are doubled A yarns (col. 8, lines 60-64).

As to claims 3 and 7, Akamatsu teaches the woven fabric is scoured, pre-heat set and dyed in a customary manner and then heat-treated under predetermined conditions (col. 9, lines 3-5).

Akamatsu teaches the properties of higher tear strength and lower air permeability is desirable. Akamatsu presents tear strength and air permeability values for the woven fabric in Table 4. Examples 21 and 22 employ the same yarn size and pattern as claimed. The tear strengths of Examples 21 and 22 are 1.72 and 2.00 kg which is equivalent to 17-19 N and in the claimed range of not lower than 7 N. The air permeability is 0.25 to 0.3 $ml/cm^2/sec$ which are in the claimed range of not higher than 1.2 $ml/cm^2/sec$.

Claims 6 and 10 are statements of use and do not distinguish the claimed invention from the prior art. As Akamatsu teaches a woven polyester fabric for sporting goods, the woven polyester fabric could be used for an outdoor application such as an umbrella or a downproof fabric. As Fukunishi is also relied upon in the rejection and Fukunishi teaches a downproof fabric, it would have been obvious to combine the claimed features motivated to produce a downproof fabric.

As to claim 11, Akamatsu is silent with respect to the thickness of the fabric.

Fukunishi teaches the fabric has a thickness of 0.07 mm or less, preferably 0.068 or less. Fukunishi teaches if the thickness is greater than 0.07 mm the feeling of the fabric becomes hard and is not easily used for an article as required [0027]. Applicant claims a fabric which is 0.065 mm or less. Fukunishi encompasses the claimed range and it would have been obvious to employ a claimed range of 0.065 mm or less as 0.065 mm is substantially the same as 0.068 mm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to produce a fabric with a thickness less than 0.065 mm motivated by Fukunishi to produce a soft fabric for a downproof article.

Response to Arguments

2. Applicant's amendments and arguments with respect to claim 1-10 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues that the cover factor of the prior art is calculated to be 1528 which is below the new claim limitation of greater than 1600. The previous claims limited the cover factor to

greater than 1500. As amended, Akamatsu no longer anticipates the claimed invention. The 35 USC 102/103 rejection is withdrawn and new 35 USC 103 rejection over Akamatsu in view of Fukunishi is presented in the present Office Action as Fukunishi presents a finding that one of ordinary skill in the art could have optimized the weave and fiber size mix motivated to achieve the desired cover factor for a down proof fabric.

Applicants presented the argument that Akamatsu's cover factor can be calculated and the resultant cover factor is 1528 and not in the claimed range. However, Examiner interprets the thick yarn to be a 120 denier yarn as Akamatsu teaches the thick yarns is 3 - 20 denier yarns that are doubled. 3-20 denier yarns are 60 denier and used in Applicant's calculation. However, Akamatsu states the yarns are doubled so the yarns would be 120 denier. The calculated cover factor would be 1680 using thick yarns that are 120 denier. As Akamatsu does not teach the property of cover factor and the basis for the calculation is not conclusive, Fukunishi is relied upon for teaching a down proof fabric with the desired cover factor.

3. As to Applicant's arguments that Akamatsu differs and teaches calendaring the filaments and not the fabric, article claims are defined by the structure of the article and not the process steps required to make the article. However, as there is a new ground of rejection including Fukunishi and Fukunishi teaches calendaring the nylon fabric to achieve a downproof fabric, it would have been obvious to employ the technique of calendaring.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER STEELE whose telephone number is (571)272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 1782

/Angela Ortiz/
Supervisory Patent Examiner, Art Unit 1780

9/22/2010